



An ISO 9001
Company

Bharat Heavy Electricals Limited

(High Pressure Boiler Plant)

Tiruchirappalli – 620014, TAMIL NADU, INDIA

MATERIALS MANAGEMENT / CAPITAL EQUIPMENT

ENQUIRY NOTICE INVITING TENDER	Phone: +91 431 257 76 53 Fax : +91 431 252 00 31 Email : skaruna@bheltry.co.in Web : www.bhel.com
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TWO PART BID	Enquiry Number: 2711300008	Enquiry Date: 31.01.2013	Due date for submission of quotation: 02.03.2013
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You are requested to quote the Enquiry number date and due date in all your correspondences. This is only a request for quotation and not an order.

Please note that under any circumstances both delayed offer and late offers will not be considered. Hence vendors are requested to ensure that the offer is reaching physically our office before 14.00 hrs on the Date of tender opening.

S.No	Description	Quantity
1	Rust Preventive Oil Coating System as per the technical specification, general guidelines instructions & commercial conditions applicable (to be downloaded from web site www.bhel.com or http://tenders.gov.in)	01 No.

IMPORTANT POINTS TO BE TAKEN CARE DURING SUBMISSION OF OFFER FAILING WHICH THE OFFER WILL NOT BE CONSIDERED FOR EVALUATION.

- CHECKLIST FOR COMMERCIAL TERMS ACCEPTANCE TO BE FILLED AND ENCLOSED ALONG WITH THE OFFER**
- DELIVERY REQUIRED 6 MONTHS FROM THE DATE OF PURCHASE ORDER/LOI.**

All updates, amendments, corrigenda etc (if any) will be posted only on the above websites from time to time, as and when required, until tender is opened. There will be no publication of such updates, amendments corrigenda etc. Through newspapers or any other media.

BHEL commercial terms & conditions with Price Bid and Bank Guarantee formats can be downloaded from BHEL web site <http://www.bhel.com> or from the Government tender website <http://tenders.gov.in> (public sector units) Bharat Heavy Electricals Limited page) under Enquiry reference above .

Tenders should reach us before 14:00 hours on the due date. Tenders will be opened at 14:30 hours on the due date Tenders would be opened in presence of the tenderers who have submitted their offers and who may like to be present

Yours faithfully,
For **BHARAT HEAVY ELECTRICALS LIMITED**

Engineer / MM / Capital Equipment



1. GENERAL:

- 1.1 This document deals with requirements for submitting offers and executing the order on placement of Purchase order / Contract for the subject item. The equipment under this specification are required for continuous Rust preventive oil coating of outside surface of seamless steel tubes being manufactured in SSTP/BHEL, having diameter between 19 and 133 mm and thickness between 2.5 and 12.5 mm and length between 4 and 20 meters.
- 1.2 Bidders have to submit the offers as below by filling in the "Vendor's response" column with relevant information against each point in the respective sections below by providing information on model no, parameters etc.
- 1.3 Note: A just 'CONFIRMED' or 'COMPLIED' or 'YES' or 'NO-DEVIATION' or similar words in the "Vendor's response" column is not acceptable and may lead to disqualification of the Technical Offer.
- 1.4 Brand and model No. of the items offered must be indicated in the offer
- 1.5 The offer shall Consist of Sections:
- 1.5.1 Part A:
- a.General Requirements
 - b.Technical offer
 - c. Commercial terms and conditions
 - d.Un-priced Price bid as per Part B (i.e. Price bid as per list shown in Part B of this Specification with the price value blanked)
- 1.5.2 Part B: Price bid for all items with split of major components:

Sl.No	Particulars	Qty	Rate
01			
02			
03			
04			
05			
06			
07			

Necessary Documents, records, drawings, catalogues as required shall also be referenced in the response column and attached with the offer.



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- 1.6 The supplier may visit SSTP and understand the requirements before bidding.
- 1.7 The requirements to be met for submitting the offer and the execution of the order are laid out below.

2. QUALIFYING CRITERIA FOR THE SUPPLY

The VENDOR has to necessarily provide the following details, for making an assessment of the firm's capability and competency: [The VENDOR is expected to give complete details against each clause in the table given below and wherever necessary an additional sheet may be attached (giving clear reference number) to cover the required details]



Sl. No.	PARTICULARS	Vendor's response with ref. cl. No. of detailed offer.
1.0	Number of Years of Experience of the VENDOR in the field of design, manufacture and supply of Rust Preventive Oil Coating machines	
2.0	YEAR of LAUNCH of the Model quoted against this ENQUIRY	
3.0	Is there any other model launched after the quoted Model? Why it is not quoted. Otherwise, indicate the likely year in which the next model is likely to be launched	
4.0	Number of Rust Preventive Oil Coating machines supplied, installed and commissioned till date for companies within INDIA: Attach list of organisations with model and contact address.	
5.0	Confirmation to performance testing requirement of the equipment prior to dispatch from supplier's end	
6.0	Details of Quality System followed (Kindly furnish the salient aspects of the QA system followed)	
7.0	Details on SERVICE-after-SALES Set-Up in India including the addresses of Agents/Service Centers in India and Asia	
8.0	Any Additional Data to supplement the manufacturing capability of the VENDOR	

2.1. The VENDOR has to compulsorily meet the following requirements to get qualified for submitting an offer for this equipment. Confirmation against each clause is to be indicated in the space provided.

Sl. No.	REQUIREMENTS	Vendor's confirmation and ref. to detail enclosed
9.0	The VENDOR shall have a minimum of FIVE Years of Continuous Experience in the Design, Manufacture & Supply of Rust Preventive Oil Coating machines. Indicate the actual experience.	



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10.0	The VENDOR shall have supplied at least 2 number of the offered model, within the last five years. The equipment shall be working satisfactorily at least for the past 2 years. Indicate the number of equipment (of QUOTED MODEL) sold in India & Other Countries.	
11.0	Reference List of Customers with full details of the customer's CONTACT PERSON for cross reference by BHEL shall be provided. Proof of performance of the offered equipment shall be provided in the offer based on similar systems supplied to other customers by way of certification of performance from 2 customers or by spot visit	

2.2. The VENDOR has to comply with the following, for accepting the Technical Offer for scrutiny by the Purchaser. Confirmation against each clause is to be indicated in the space provided.

Sl. No.	REQUIREMENTS	Vendor's confirmation and ref. to detail enclosed
12.0	The Technical Offer shall be supported by Product Catalogue and Data Sheets in ORIGINAL and complete technical details of 'Bought-Out-Items' with copies of Product Catalogue and Selection Criteria	
13.0	The Commercial Offer (given with the Technical Offer – Part I) shall contain the Scope of Supply and the Un-Priced Part of the Price-Bid, for confirmation of Scope of Supply.	



14.0	The points confirmed by the supplier based on the clarifications sought for the original offer shall be incorporated in the revised final offer wherever applicable. Pl. confirm	
15.0	The Vendor shall provide a complete list of out sourced electrical, electronic and mechanical components with Source name, Model no., Specification and drawings	

Technical Requirements:-

Sl.No	SSTP/BHEL REQUIREMENTS	Vendor's Response
3	Job Details	
	Seam less steel tubes manufactured will be traveling on a tube conveyor (as shown in sketch on last page) one by one with a gap between each tube of about 200 to 1000mm. As the tube travels on this conveyor, a Rust Preventive Oil Coating is to be applied by an automatic system. After the end of the coating, the tube will be ejected automatically from the conveyor and rolled down a sloping table to a trough where the tubes will be collected in to bundles and strapped together and moved for shipment.	
3.1	Job Dimensions and marking details	
	Tube sizes to be coated: OD 19 to 133 mm. Thickness of tubes: 2.5 mm to 12.5 mm Length of tubes: 4 to 20 meters. Tube centre height 1-1.2 m approx from floor Material of tubes Carbon steels and alloy steels Speed of tube travel 0.3m/s to 2 m/s dependent on the OD Coating thickness 20-30 microns. Paint Medium: Quick drying Rust preventive oil as per Specification: PR: CHEM: 09 – 04 / 03. attached in Annexure A Solvent: NC thinner as per IS5667. Rate of output: 1000 tubes per shift of 8 Hrs. (operation in 2 or 3 shifts)	
3.2	The Rust preventive oil coating machine shall be designed with the latest, state of the art technology. The machine shall be capable of coating the	



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	outside surface of seamless tube of 4 to 20 metre length of outer diameter varying from 19mm to 133mm using rust preventive oil throughout its length uniformly.	
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3.3	Provision should be given to regulate number of nozzles working at a particular time to account for varying outer diameter and separate provision to control the oil flow from individual nozzles also should be given. Regulation of nozzle adjustment should be easily accessible.	
3.4	An ID fanunit to be provided for sucking the fumes from inside the machine chamber, thus not spreading into the working atmosphere.	
3.5	Sealing to be given at the entry and exit of the machine over pipe outer diameter to avoid outside spillage of oil.	
3.6	Excess oil from the RPF chamber to be drained to a separate sealed tank and to be recycled.	
3.7	Separate door/ opening of sufficient size should be provided for cleaning of the inside of the chamber.	
3.8	Automatic flushing system for cleaning the inside of chamber to be ensured.	
3.9	Pneumatic - Compressed air at 5 bar max. pressure will be provided by BHEL for the spraying device and cleaning nozzles. Necessary filtering unit and control system shall be part of the supply.	
3.10	Electric Equipment: The unit shall work in 230v AC. The oil coating unit shall have a set of switch cabinets, terminal boxes, motor protection system, necessary cooling system etc. The system should be compatible with computer systems used in previous operations. The operator desk must include the following parts: <ul style="list-style-type: none">- Push buttons:<ul style="list-style-type: none">• Emergency Stop• Control voltage ON/OFF• Signal lamp for error With the PC, the operator should be able to work in manual and automatic mode. In Manual mode- every single step of the machine can be operated separately. The working positions of the different devices are to be controlled by sensors, in order to prevent damages. In Automatic mode-Fully automatic oil coating cycle will get started by pressing	



	the START button and will be stopped anytime by pressing the STOP button.	
3.11	<p><u>Documentation</u> - The documentation shall be supplied three-fold on paper and one-fold on CD-Rom in English language consisting of the following:</p> <ul style="list-style-type: none">machine erection and general noteserection manual, assembly drawing and part listsgeneral description of function and function cyclemaintenance instructionslubrication instructionsoperating instructionscircuit diagram, cable list, etc.hydraulic and switch planspart list and wear part listFinal foundation drawings, which contain all sizes, cable channels and load indexes and final layout drawings of the plant <p>The documentation on CD-ROM shall be in the following format:</p> <ul style="list-style-type: none">Documents and lists in PDF formatDrawings in DWG formatLayout and foundation plan in DWG format	



4	Scope of supply	
	Supply, installation & commissioning of automatic Rust Preventive oil Coating system. This may consist of:	
4.1	Oil tank with pump, solvent tank, piping from booth, spray booth complete with spray chamber and oil flow arrester with exhaust blower, high pressure airless spraying pump of reputed model with non return valve, three way valve, ball valves, HP ball valves, HP pressure gauge, HP Filter, inlet oil heater of required power rating, low pressure filter, Pump in required nos with Suction Hose and Air Filter Regulator, Low Pressure oil Filter, Spraying ring & nozzles, Cooling water tank of sufficient capacity with pump, filter and valves and required set of spares like hoses, pump heaters and nozzle and recycling unit.	
4.1.1	PLC Based Control system with necessary sensors, control valves, proximity / limit switch etc. to detect entry and exit of tube and start / stop oiling system accordingly. This may include necessary controls for operation of reservoir, control valves etc.	
4.1.2	Since the system involves quick drying oil, the technology and mechanics for preventing clogging of tubing, nozzles, filters paint gun etc should be available. Even when system has not been used for some significant period, the automatic flushing system should be able to function properly without delay and resume further operations.	
4.2	The system shall be installed in BHEL premises and commissioned by the supplier and tested for performance as per this specification.	
5	General requirements:	
5.1	The floor space requirement and foot print layout, schematic drawing and operational features shall be provided in the offer	
5.2	Supplier shall provide list of bought out items separately with model no. and maker along for major items like motor, Pneumatic cylinder, Solenoid valves, filters, guns etc.	
5.3	Supplier shall prepare quality plan covering major items indicating critical quality characteristics, method of measurement, reference standard, acceptance norms and submit to BHEL before starting the manufacturing activities.	
5.4	With respect to point 3 above, proof of performance of the offered system shall be provided in the offer based on similar systems supplied to other customers	



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	by way of certification of performance or by spot visit.	
5.5	The system performance shall be checked at BHEL after installation on a set of tubes of 3 different Diameters covering the entire range of tube sizes. Parameters like uniformity, coating thickness etc. has to be demonstrated for a period of at least 2 shifts continuously.	
5.6	Service shall be provided by the supplier during guarantee period and also later through AMC. The system supplied must be supported by way of spares, availability and service for a minimum period of 10 years.	
5.7	List of spares with part identification no. (Tools, Mechanical, Electrical & Electronics) to be maintained for ensuring continuous operation with least delay time shall be provided in the offer with price. 1 set of nozzles if applicable must be included as spare in the price list. Critical spares like pneumatic pump, valves, hoses and filters shall be given 2 nos each.	
5.8	Service and user manual to be supplied along with unit.	
5.9	Supply of required commissioning spares for proving the performance of the m/c at SSTP is supplier's scope.	



6	Installation, Performance & Acceptance Of The System	
6.1	The system shall be installed and commissioned by the manufacturer of the system.	
6.2	The system performance shall be checked on a set of tubes, which will be provided by the supplier in for different lengths, diameters and grades of material.	
6.3	Service shall be provided by the supplier during guarantee period and also later through AMC. The system supplied must be supported by way of spares, availability and service for a minimum period of 15 years.	
6.4	Remote troubleshooting from Suppliers works is to be provided through ISDN-modem / Ethernet connectivity.	
6.5	Guarantee for the trouble free performance of the system shall be provided for min. 2 years for 3 shift operation. This shall be by way of performance Bank guaranty as applicable. The guarantees of the seller refer to: Quality of oil coating, life of spray gun, non clogging of gun unit and any other aspect agreed upon.	
7	Training and Documentation:	
7.1	Supplier shall provide operational and first level system maintenance training for 8 persons for operation and maintenance at BHEL.	



8. **The Following commercial points also may be confirmed.**

Sl.No.	Description	BHEL Offer / Requirement	Vendor's confirmation
01	DELIVERY	6 Months from the date of Letter-of-Intent	
02	INSPECTION	Will be carried out at BHEL and the Performance test is to be witnessed by BHEL Official.	
03	WARRANTY	The equipment shall be warranted for a minimum Period of 12 months from Commissioning or 18 months from date of dispatch, whichever is earlier.	
04	TRAINING	Refer Clause 7.0	
05	PERFORMANCE	As per BHEL tender specifications	

Annexure A

PR: CHEM: 09 – 04 / 03: REQUIREMENTS FOR TEMPORARY RUST PREVENTIVE OIL

1	Specific Gravity at ambient temperature	0.85 - 0.95
2	Flash Point C (min)	40
3	Drying time :	½
	Surface Dry (Hours, max)	
	Tack free (Hours, max)	4
4	Dry film thickness (Microns) per coat-min	20
5	Ford cup Viscosity (No.4) seconds at ambient temperature	25 ± 5
6	Odour	No objectionable Odour
7	Film type Transparent/Translucent	Transparent
8	Application Method	Brush/Spray
9	% Non- Volatiles by mass	55 ± 5
10	Temperature Resistance of RPF film at 50 C (for 6 hrs)	To pass test.
11	Corrosion Protection under conditions of condensation for 300 hours.	No sign of corrosion.

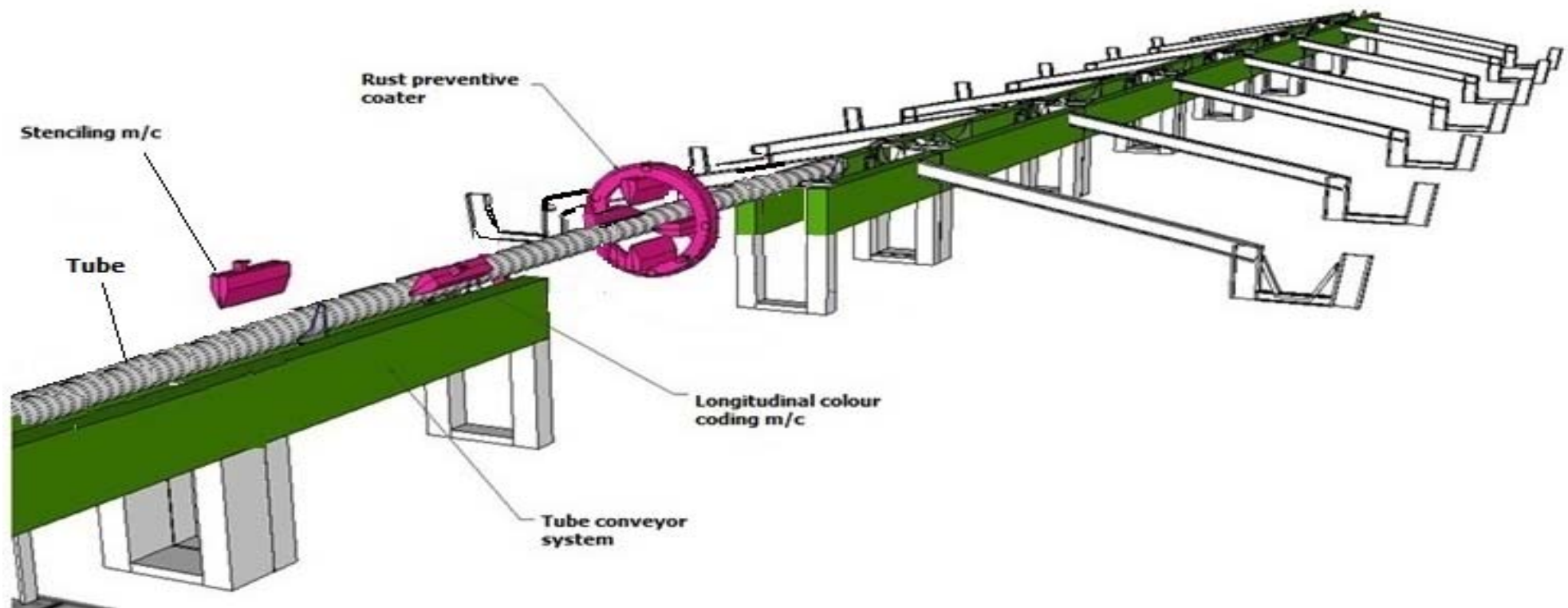


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12	Liebermann –Storch test for the detection of natural resin & its derivatives	No development of pink colour – indicating absence of natural resin.
13	Salt spray test for 72 hours	No sign of corrosion.
14	Outdoor durability	The coating shall not crack or turn opaque when exposed to outdoor, unsheltered condition for 1 year.
15	Scratch Hardness test (Under load of 1000 g as per IS 101 (Latest))	To pass test
16	Compatibility with Alkyd /Lacquer based paints.	Compatible.
17	Keeping Property – Months (Shelf life) min.	12
18	General conformance to I.S Specification	IS 1153 (Latest)
19	Packing standard/markings	Supply in 200/20/10 Lt. Barrels as per PO indicating the following. Rust Preventive oil for BHEL use only. Supplier's Name: Batch No: Date Quantity: Shelf Life: BHEL Specn.PR:CHEM:09-04 (latest)
20	Test certificate	The supplier shall furnish test certificate for the above requirements Sl.No.1 to 16 in duplicate.



PURCHASE REQUEST

Rust Preventive Coating system

Scope:

Design, manufacture, supply, erection and commissioning as per general technical delivery condition Ref. No.: SSTP:

Quantity: 1 No.

Operation:

Seamless steel tubes manufactured in SSTP will be travelling on a roller conveyor one by one with a gap between each tube of about 200 to 1000mm. As the tube travels on this conveyor, a Rust Preventive Oil Coating is to be applied by an automatic system. After the end of the coating, the tube will be ejected automatically from the conveyor and rolled down a sloping table to a trough where the tubes will be collected into bundles and strapped together and moved for shipment.

Technical data:

Tube sizes to be coated	:	OD 19 to 133 mm.
Thickness of tubes	:	2.5 mm to 12.5 mm
Length of tubes	:	4 to 22 meters.
Tube centre height	:	1-1.2 m approx from floor
Material of tubes	:	Carbon steels and alloy steels
Speed of tube travel	:	0.3m/s to 2 m/s
Coating thickness	:	20-30 microns.
Paint Medium	:	Quick drying Rust preventive oil
Solvent	:	General purpose thinner as per IS5667.
Rate of output	:	1000 tubes per shift of 8 Hrs. (operation in 2 or 3 shifts)

Scope of Equipment:

Paint reservoirs for paint and Solvent, PLC based control systems and sensors

Pneumatically Driven Paint Transfer Pumps with Suction Hose and Air Filter Regulator,

Low Pressure Paint Filter, Tube and Regulator with gauge,

Low Pressure Paint Tube and spraying guns.